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ABSTRACT

Wake Summerbridge is an enrichment program that has supported selected Wake County Public School System (WCPSS) (North Carolina) middle school students for a number of years. This evaluation compared subsequent academic performance, suspensions, and dropout rates of students who had participated in the program with a comparison group of students with similar characteristics who did not participate in the program. The main positive finding was that dropout rates were much lower for Summerbridge students than for the comparison group (1% versus 13%). Achievement scores and grade point averages showed a slight but consistent advantage in absolute terms for Summerbridge students over the comparison group. The differences were not statistically significant, although they may have some educational significance. The percentage of students receiving "F's and suspension rates actually favored the comparison group. However, the higher dropout rate among comparison students may account for the lower number of "F"s earned by this group. Some cautions must be kept in mind when interpreting these findings. Sample sizes were relatively small, which makes statistical significance more difficult to detect (about 80 per group). Groups could differ in ways that could not be determined from school system data files (e.g., attitude toward school, rigor of course selections, middle versus higher income status). Given the results, the cost of providing the service should also be considered in decisions about future funding. (Author/SLD)

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Eye on Evaluation

Evaluation and Research Department

November 2001 E&R Report No. 01.47

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WAKE COUNTY PUBLIC SCHOOL SYSTEM

Eye on Evaluation

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The Effectiveness of the Wake Summerbridge Summer Enrichment Program

Kristin Harlow & Nancy Baenen[1]

ABSTRACT

Wake Summerbridge is an enrichment program that has supported selected WCPSS middle school students for a number of years. This evaluation compared subsequent academic performance, suspensions and dropout rates of students who had participated in the program with a comparison group of students with similar characteristics who did not participate in the program.

The main positive finding was that dropout rates were much lower for Summerbridge students than for the comparison group (1% versus 13%). Achievement scores and grade point averages showed a slight but consistent advantage in absolute terms for Summerbridge students over the comparison group. The differences were not statistically significant, although they may have some educational significance. The percentage of students receiving F's and suspension rates actually favored the comparison group. However, the higher dropout rate among comparison students may account for the lower number of F's earned by this group.

Some cautions must be kept in mind when interpreting these findings. Sample sizes were relatively small which makes statistical significance more difficult to detect (about 80 per group). Groups could differ in ways that could not be determined from school system data files (e.g., attitude toward school, rigor of course selections, middle versus higher income status). Given the results, the cost of providing the service should also be considered in decisions about future funding.

THE SUMMERBRIDGE PROGRAM

Wake Summerbridge is a three-year tuition-free program for middle school students from Wake County.[2] Wake Summerbridge uses the original Summerbridge program begun at San Francisco University High School as a model. The program is run by the Ravenscroft School with help from the Wake County Public School System. The program includes two mandatory and one optional six-week summer sessions, a school year Saturday and mentoring program, community service, and high school advising. Students meet for six Saturdays each semester. The summer program is located at the Ravenscroft School campus, while the program provided during the school year is located on the North Carolina State University campus. Wake Summerbridge

[1] Kristin Harlow was contractor for this report.

[2] The Program name is changing to Capital Breakthrough.

serves students with high academic potential, many of who have limited access to supplemental academic programs. Their teachers are outstanding high school and college students who are interested in education and community service. This intensive program stresses academic excellence, leadership, creativity, and diversity. Classes are small, so the students get a good deal of individual attention.

The stated goals of the Summerbridge program are to empower students to succeed in rigorous academic high school programs that will enable them to attend strong colleges, and to empower all students to take ownership of their education and become leaders within their programs and schools.

The Wake County Public School System (WCPSS) currently provides in-kind services to the Summerbridge program in the form of transportation, at a cost of approximately $32,000 per year. In addition, WCPSS provides $3,500 per year for the Summerbridge program to hire two teachers.

DESIGN OF THIS STUDY

This study is designed to evaluate the long-term effectiveness of the Wake Summerbridge program. It focuses on whether three cohorts of Wake Summerbridge participants are more successful in high school than a comparison group of similar students who did not participate in the program.

Data Source

Data were collected from the Wake County Public School System student database. The data used in this study include:

- Demographic data such as age, race/ethnicity, and free or reduced lunch eligibility,
- End-of-grade test scores from 5th grade (pre-test) and 8th grade (post-test),
- Grade Point Average (GPA),
- Number of suspensions,
- Number of dropouts, and
- End-of-course test scores from five core courses required for graduation.

Methodology

Students who participated in the Summerbridge program were compared to a similar group of students who were matched for age, race, eligibility for free or reduced-price lunch, and 5th grade end-of-grade test scores. Students were matched on 5th grade end-of-grade test scores to create a comparison group with academic achievement similar to that of the Summerbridge students before the intervention began. There were 86 students who participated in the program, and 80 matching students constituted the comparison group.

The mean scores of end-of-grade tests, end-of-course tests, and GPA were found for the Summerbridge participants and the comparison group. The means were compared using a one-way analysis of variance test to determine whether the difference between the means was likely caused by the Summerbridge program or could have occurred by chance.

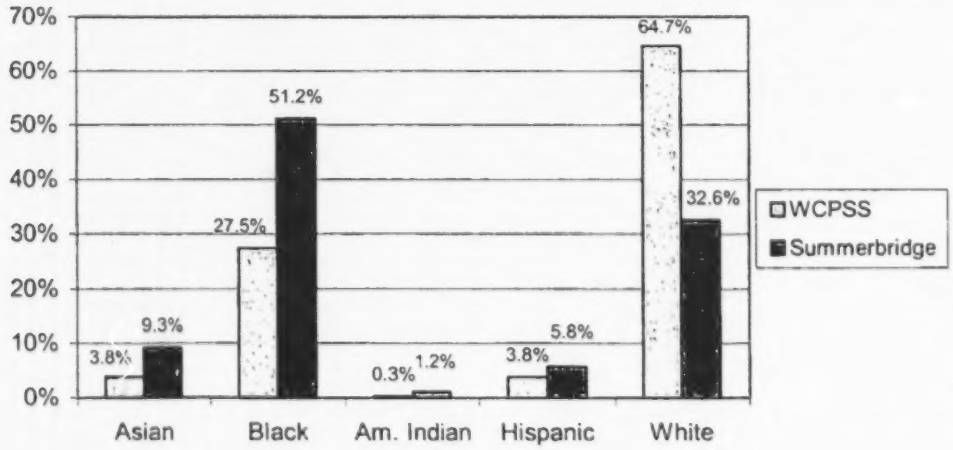
DEMOGRAPHICS

This study used three cohorts of Wake Summerbridge participants to evaluate the program. The first cohort consisted of 32 participants who began the program in the summer of 1994. The second cohort had 27 participants and began in 1995, and the third cohort consisted of 28 participants and began in 1996. All Summerbridge participants began the program the summer after their 6th grade year. As of the fall of 2001, 14 of the original 86 Summerbridge participants, or 16%, had left the Wake County Public School System (WCPSS). In comparison, 16 of the 81 students in the comparison group (20%) had left WCPSS.

Exactly half of the students in the Summerbridge program in the selected years were male and half were female. African American students comprised 51.2% of the participants, 5.8% were Hispanic, and 32.6% were White students. In addition, 34% of the Summerbridge participants qualified for free- or reduced-price lunch (the only indicator available of low income status).

The racial composition of Wake County Public School System as a whole is somewhat different. In 1999, African American students were 27.5% of the total population, while 3.8% were Hispanic and 64.7% were White. The rate of free- and reduced-price lunch of middle school students in Wake County is 21%. Thus, African American students, and free lunch students, to a lesser extent, are over-represented in the population of those who participated. This is consistent with the program's intent to select students with high academic potential who may have limited access to supplemental programs. Since low-income students have a greater risk of school failure than non-low-income students, increasing the percentage of FRL eligible students in the Summerbridge program to about 50% is desirable (based on other programs for at risk students such as the Accelerated Learning Program).

Figure 1. Race/Ethnicity of Summerbridge Participants vs. WCPSS



Dropouts

As of the fall semester 2001, records indicate that only one of the 87 Summerbridge participants, or 1%, had dropped out of school. In comparison, 10 of the 80 students in the comparison group, or 13%, had dropped out of school. The disparity in the number of dropouts between the groups

suggests that the Summerbridge program may have had a positive effect on whether students decided to drop out of school.

Figure 8: Dropout and Transfer Rates

	Currently Enrolled in or Graduated from WCPSS	Transferred	Dropped out	Unknown Withdrawal Status
Summerbridge Participants	67	5	1	14
Comparison Matches	55	7	10	8

RESULTS

End-of-Grade Testing

If the Summerbridge program was successful in increasing the academic achievement of its participants, it is not evident by the End-of-Grade test scores. The Summerbridge participants did increase their reading score slightly more than the comparison group over the course of the program, but a one-way ANOVA test on the differences in 8th grade reading scale scores showed no statistical difference between the Summerbridge participants and the comparison group ($F=.608$, $p>>.1$). The greater increase in EOG reading scores of the Summerbridge participants compared with the comparison group may be educationally significant, if not statistically significant, due to the importance of small differences in the scale.

Figure 2. Reading End-of-Grade Test Scores

	Number of Students	5th Grade Scale Score (Pre)	8th Grade Scale Score (Post)	Scale Score Increase
Summerbridge Participants	86	156.1	165.2	9.1
Comparison Matches	80	155.6	164.3	8.7
All WCPSS Students 1995-1998[3]		155.4	164.4	9.0

The Summerbridge students show the same rate of increase in the math End-of-Grade scores as both the comparison group and Wake County students in general. The one-way ANOVA test shows again no statistical difference between the two groups' 8th grade EOG math scale scores ($F=.132$, $p>>.1$).

[3] Data reported in "Measuring Up: 1999-2000 End-of-grade Multiple Choice Test Results" August 8, 2000.

Figure 3. Math End-of-Grade Test Scores

	Number of Students	5th Grade Scale Score (Pre)	8th Grade Scale Score (Post)	Scale Score Increase
Summerbridge Participants	86	158.9	178.2	19.3
Comparison Matches	80	158.2	177.5	19.3
All WCPSS Students 1995-1998[4]		158.1	177.4	19.3

High School Performance

One goal of the Summerbridge program is to prepare students to succeed in high school. To measure the success of this goal, we compared a number of high school tests and grades to see how the Summerbridge cohort compared to their comparison group.

- The mean Grade Point Average (GPA) of the students who participated in the Summerbridge program is 2.86, while the mean GPA of the comparison group is 2.76. However, the difference is not significant using the one-way ANOVA ($F=.291$, $p>>.1$).
- On the End-Of-Course tests for Algebra 1, English 1, ELP, Biology, and U.S. History, the Summerbridge participants showed higher mean scores on every test compared to their comparison group. However, score differences were not statistically significant.
- Students who participated in the Summerbridge program did receive fewer Ds through the 10th grade, but the difference was not statistically significant. The comparison group of students received slightly fewer Fs than the students who participated in the Summerbridge intervention. Overall, 57.5% of Summerbridge students received no Ds or Fs compared to 48% of the comparison group.

Figure 4. End-of-Course Mean Test Scores

	Algebra 1	English 1	ELP	Biology	U.S. History
Summerbridge Participants	63.2 n=41	59.2 n=43	58.5 n=43	59.5 n=41	59.4 n=23
Comparison Matches	60.6 n=34	57.3 n=36	57.3 n=36	57.3 n=36	55.1 n=20
ANOVA Results	F=1.375 p>.2	F=.999 p>.2	F=.452 p>.5	F=1.286 p>.2	F=2.475 p=.123

[4] Data reported in "Measuring Up: 1999-2000 End-of-grade Multiple Choice Test Results" August 8, 2000.

Figure 5. Ds and Fs

	Number of Students	Percent of no Ds	Percent of no Fs	Percent of no Ds or Fs
Summerbridge Participants	66	59%	73%	57.5%
Comparison Matches	58	50%	76%	48%

Figure 6. Number of Ds

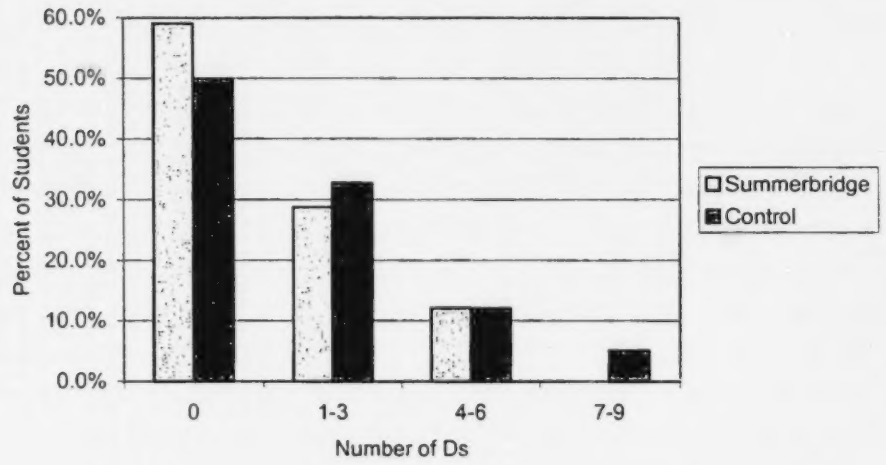
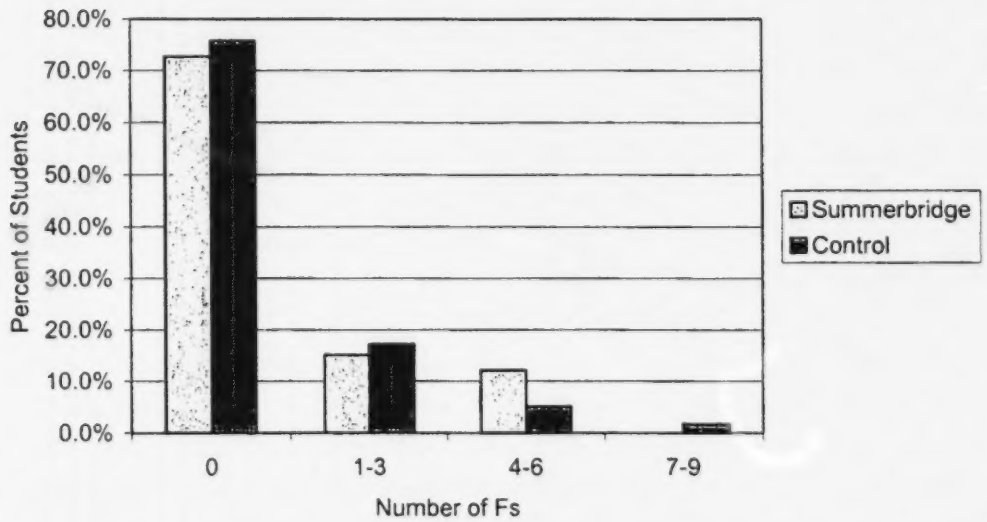


Figure 7. Number of Fs



Behavior

Students in the Summerbridge program were actually more likely to be suspended from school than those in the comparison group. Seven of the 86 students (8.1%) in the Summerbridge program were suspended for one or more days, versus only three of the 80 students (3.8%) in the comparison group. Although the numbers are small, it appears that the Summerbridge program was not effective in preventing serious problematic behaviors resulting in suspension.

DISCUSSION AND CAUTIONS

Most of the academic measures we used to evaluate the Summerbridge program were slightly higher in absolute terms for the Summerbridge group than for the matched comparison group, but differences were not statistically significant. Lower dropout rates for Summerbridge participants are noteworthy, and may have impacted patterns found in course grades earned as well. The nine comparison students who dropped out (compared to one for Summerbridge) would have been more likely to earn Fs had they stayed in school. It appears that the Summerbridge students are more likely to stay in school, even when they are struggling academically.

Some cautions are important to keep in mind in interpreting these results. While students were matched on a variety of factors, groups may have differed in important ways not captured by the available data. The income indicator, for example, distinguishes only between those eligible for free- or reduced-price lunch and those not eligible. Students in Summerbridge, willing to commit to a summer program over time, may also have had a better attitude toward school initially. Statistical significance was also difficult to achieve because of the relatively small sample sizes.

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